



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/081,751	02/22/2002	Thomas E. Willis	ITL.0630US	9398

7590

08/16/2004

Timothy N. Trop
TROP, PRUNER & HU, P.C.
STE. 100
8554 KATY FWY
HOUSTON, TX 77024-1841

EXAMINER

TRAN, HENRY N

ART UNIT

PAPER NUMBER

2674

DATE MAILED: 08/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/081,751

Applicant(s)

WILLIS ET AL.

Examiner

HENRY N TRAN

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - The terms “programmably” recited in lines 13 of page 7 and line 17 of page 15 are editorial errors.
 - The same reference characters, T₀, are used for different features, which are: a second force “ON” time and a second force “OFF” time, see lines 12-16 of page 13.

Appropriate correction is required.

For the purpose of this Office action, the examiner assumes that the term “programmably” is changed to --programmed-- or --programed--. Applicant is required to affirm or reverse this assumption in response to this Office action.

Claim Objections

2. Claims 5, 6, 19, 20 and 29 are objected to because of the following informalities: each of the claims includes the word “programmably”, which is found as an editorial error. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2674

4. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al (U.S. Patent No. 5,977,942, hereinafter referred to as "Walker '942") in view of Worley, III et al (U.S. Patent No. 6,072,452, hereinafter referred to as "Worley '452").

Regarding claims 11-30, Walker '942 teaches a display system, comprising a LCD panel 40 including a spatial light modulator having a pixel array including first and second pixels 60A, 60B, etc...; two first circuits 69A, 69B, etc...; and a second circuit, which comprises a video controller 70 and a waveform generator 67, for supplying a common reference waveform and local pixel data stored in registers, e.g., capacitors for determining modulated signals or transition pulses having first logic states, e.g., "ON" modulated signals RI1, RI2, etc. separating by pulse intervals, which have second logic state, e.g. the "OFF" pulse signal, defined by time lengths, e.g., from time t2 to time t7 (on the Red data); a waveform forming device 64A (a voltage comparator circuit 64A) for providing pulse width modulated signals having a refresh period based on a count provided by the counter 66; a digital pixel source provided in the video controller 70, see figures 7 and 8; col. 5, line 38 to col. 7, lines 58. Walker '942 also teaches that the waveform generator 67 could be of a variety of waveform generators, including a waveform generator capable of generating a digital common reference, see col. 7, lines 59-64. However, Walker '942 does not teach expressly that the controller for providing global digital information and the local digital information and the signal generator for providing the modulated signal based on a comparison of the global and local digital information; the selective delay of the transition base on pixel value. Worley '452 teaches a liquid crystal display system, comprising a typical pixel cell 100 having a storage element 108, which is a digital storage element, e.g., SRAM latch, for generating pulse width modulated (PWM) signals representing "on" and "off"

Art Unit: 2674

states; and the forced "on" states 602 and the forced "off" states 604, see figures 1 and 6; col. 1, lines 20-34, lines 58-62; col. 5, lines 13-17; and col. 5, line 65 to col. 6, line 11). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the digital storage for storing digital data and the selective delay using the forced "on" and forced "off" signals as taught by Worley '452 in the Walker '942 device because this would provide a display system conveniently adapted to use in a wide variety of pulse modulation schemes for displaying an improved, high quality multi-color images, see Worley '452, col. 15, lines 3-12. By this rationale, claims 11-30 are rejected.

Regarding claims 1-10, which are method claims corresponding to the apparatus claims 11-20, and are rejected on the same basis set forth in claims 11-20 discussed above.

Conclusion

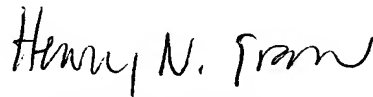
5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are: US Pub. No. 2002/0063728 A1, and U.S. Patent Nos. 6590549, 6373478, and 6137462, which teach pulse-width modulation schemes for driving liquid crystal display systems using analog or digital signals.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENRY N TRAN whose telephone number is 703-308-8410. The examiner can normally be reached on M-F 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD A HJERPE can be reached on 703-305-4709. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2674

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HENRY N TRAN
Primary Examiner
Art Unit 2674

8/10/04